ASCI Academic Strategic Alliances Program

Presented at ASAP Preproposal Conference

December 5, 1996

www.llnl.gov/asci-alliances

Academic Strategic Alliances Program (ASAP)

Lawrence Livermore National Laboratory

Los Alamos National Laboratory

Sandia National Laboratories

U. S. Department of Energy, Defense Programs

ASCI ASAP Strategy Team

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ASAP Major Goals and Objectives

ASCI simulation and computing problems are so hard that labs can't solve them alone

- **Establish and validate large-scale, multidisciplinary modeling, and simulation as a viable scientific methodology across SBSS related applications (e.g. requiring coupled complex simulation sequences).**
- **Enhance the overall ASCI goals by engaging external expertise in computer and simulation fields of interest.**
- **Couple ASAP efforts with ongoing ASCI & SBSS projects in DOE weapons laboratories.**
- **Leverage other basic science, high performance computing systems, and problem solving environments research in the academic community.**
- **Strengthen training and research in areas of interest to ASCI & SBSS and strengthen the ties among LLNL, LANL, SNL and Universities.**

Examples of Potential Research Topics

- **Physical Sciences/ Mathematics**
  - Hydrodynamics and turbulence
  - Transport
  - Material and condensed matter physics
  - Energetic materials
  - Numerical Methods
  - Applications & mathematical Algorithms
  - Computational mechanics
- **Terascale computer systems, Computer & Computational Science**
  - Scalable terascale architectures
  - Terascale systems software
  - Scalable I/O and storage
  - Visualization
  - Scientific data management
  - Tools and programming environments
  - Libraries for scalable systems
  - Secure, high performance networking

see background papers on the Website for more details

ASAP Structure

- **Level I**
  - **Strategic Alliance Centers**
- **Level II**
  - **Strategic Investigations**
- **Level III**
  - **Individual Collaborations**

Strategic Alliance Centers

- Stable, long term relationships to achieve broad milestones
- Support confidence in complex simulation
- Develop terascale computer systems, computation and computer science infrastructure
- multidisciplinary, coordinated effort
- 4-5 alliances (single institution...collaboration with other key researchers and industry partners are ok)
- FY97 funding~ $5M total
- Funding growth to $4-$5M/year each for up to 10 years
- Tri-Lab competitive solicitation

Strategic Investigations

- More narrowly focused relationships
- Professor and 3 to 5 graduate students or post-docs
- Relevant to research barriers in ASCI program
- 2 - 3 year projects
- At least one laboratory interface
- FY‘97 separate solicitation per lab
- FY‘98 Tri-Lab solicitation (with specific desired research topics), selection, and project management

Individual Collaborations

- University collaborations developed on an “as needed” basis
- Tightly coupled with lab research
- Funded out of Applications and PSE strategy funds
- Generally sole source
- No formal solicitation, researcher (group) to researcher (group)

ASCI ASAP Website
http://www.llnl.gov/asci-alliances

- ASCI Academic Strategic Alliances Overview
- ASAP Program Structure
- Academic Strategic Alliances Program Statement
- Request for Preliminary Proposals
- Preproposal Conference Info & Agenda
- Unclassified Version of Simulation Roadmap\Six (6) Background Information Papers
- Frequently Asked Questions (FAQs)
- Viewgraphs from 12/6 ASAP preproposal conference
- Link to ASCI home page
- ASCI Program Plan

Strategic Alliance Centers Draft Schedule

	Estimated Date
1. Program Announcement posted	11/12/96
2. Preproposal conference	12/5-6/96
3. Preproposal submission	1/16/97
4. Preproposal review complete	1/21/97
5. Feedback & call for final proposals	2/4/97
6. Final proposals due	3/18/97
7. Site visits	TBD
Bottom line: Awards Announcement	5/1/97

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Goal

Expected Evaluation Criteria

- **Principal Criteria**
  - **Proposed complex, multidiscipline simulation sequence and expected impact on advancing simulation methods (includes terascale computer systems, computer and computational science infrastructure)**
  - **Technical merit and feasibility of approach, including clarity of 3, 5, and 10 year goals**
  - **Relevance to ASCI Program and Science Based Stockpile Stewardship approach**
  - **Institutional commitment, which includes: qualifications & experience of principal investigators, past research accomplishment, existing computational and science infrastructure**

Evaluation Criterion (continued)

- **Secondary Criteria**
  - **Cost realism**
  - **Supportive science or experimental infrastructure**
  - **Management and self-assessment plans**
  - **Collaborative arrangements or leveraging**

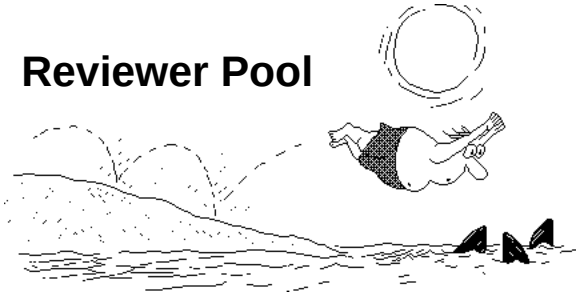
Strategic Alliance Centers
Preproposal Review Process

Preproposals

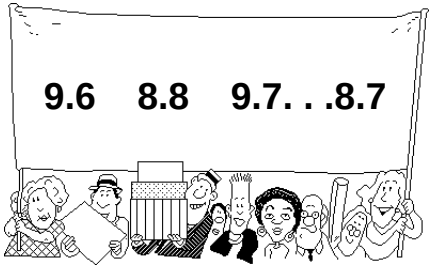
Assign to Reviewers

HQ, Labs

Reviewer Pool



Industry, Government, Academia



Ratings

Prioritize, Feedback, Down Select

Encourage
Full Proposals

Strategic Alliance Centers Preproposal Review Process

- Form ASAP reviewers pool (RP) with members representing DOE HQ Staff, DP laboratories technical interface teams, other government agencies, academic and industry researchers.
- HQ ASAP Team, Labs ASAP Troika, and lead authors of ASAP background papers form Review Oversite Team (ROT) and assign each to a Preproposal Review Teams (PRT) of 3-4 reviewers chosen from reviewers pool.
- PRTs rate proposals according to preproposal call evaluation criteria and recommend encouraging or discouraging submission of full proposal.
- Review Oversite Team study PRT's recommendations and prepare recommendations for proposal encouragement and feedback and obtain approval from Camp, Mercer-Smith, Nowak, Larzelere and Weigand for call for full proposals.

DRAFT ASAP Preproposal Review Process Timeline

- **January 16, 1997 – Preproposals due**
- **January 20, 1997 – ROT meets**
- **January 28-29, 1997 – PRTs review proposals**
- **January 30, 1997 – ROT compiles recommendations**
- **January 31, 1997 – Camp, Nowak, Mercer-Smith, Weigand, Larzelere, Hammer meet to approve final call and proposal invitation list.**
- **1st week in February– request for formal proposals issued**

Review Oversite Team (ROT)

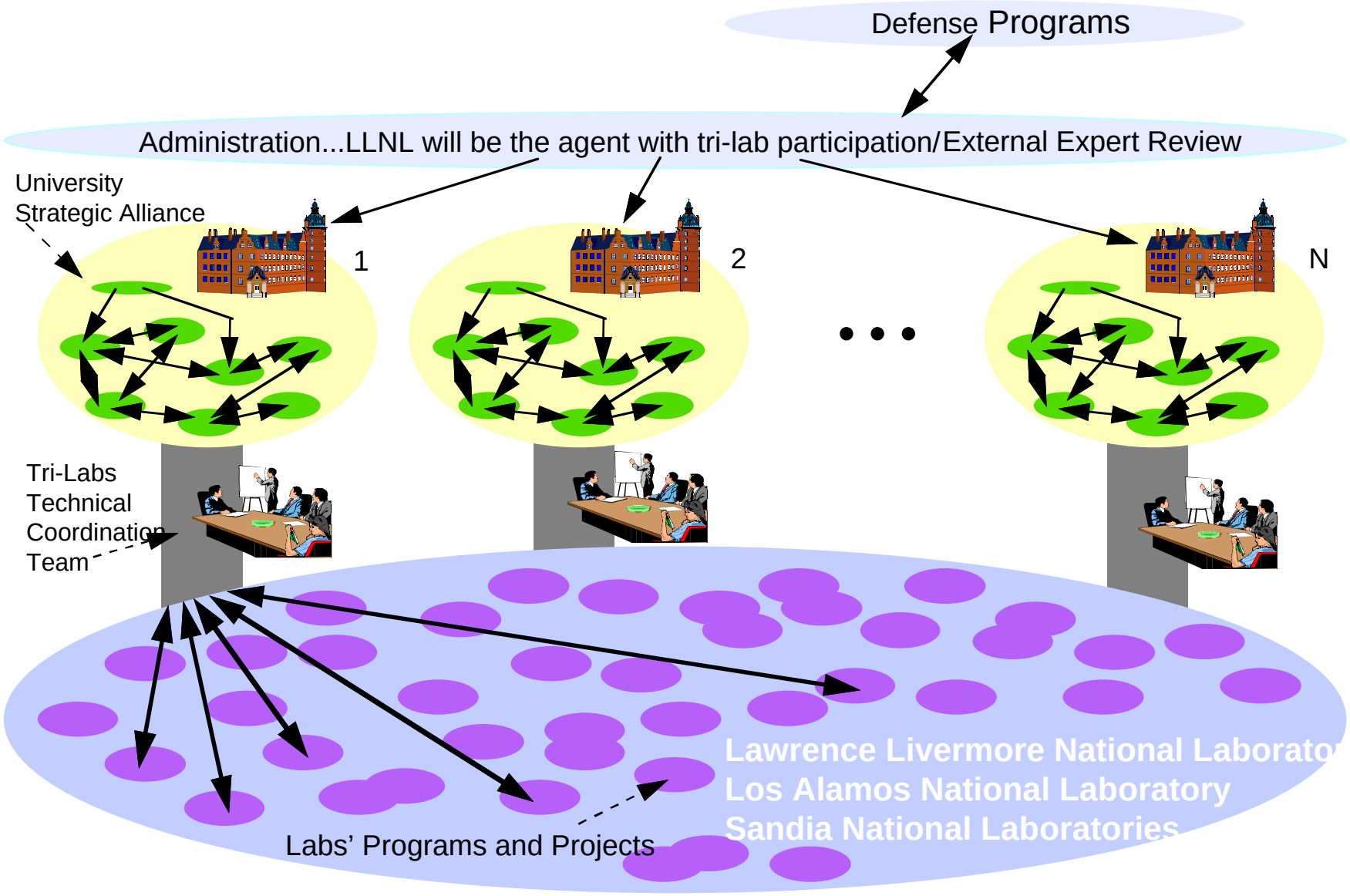
- **HQs – Thuc Hoang, Merrell Patrick**
- **ASAP Troika – Ann Hayes, Dona Crawford, Dick Watson**
- **White Paper Lead Authors –Terry Sewell, Christian Mailhiot, Jeff Brown, Elaine Gorham, Charles Westbrook, Comp. Physics Person**

Reviewers Pool

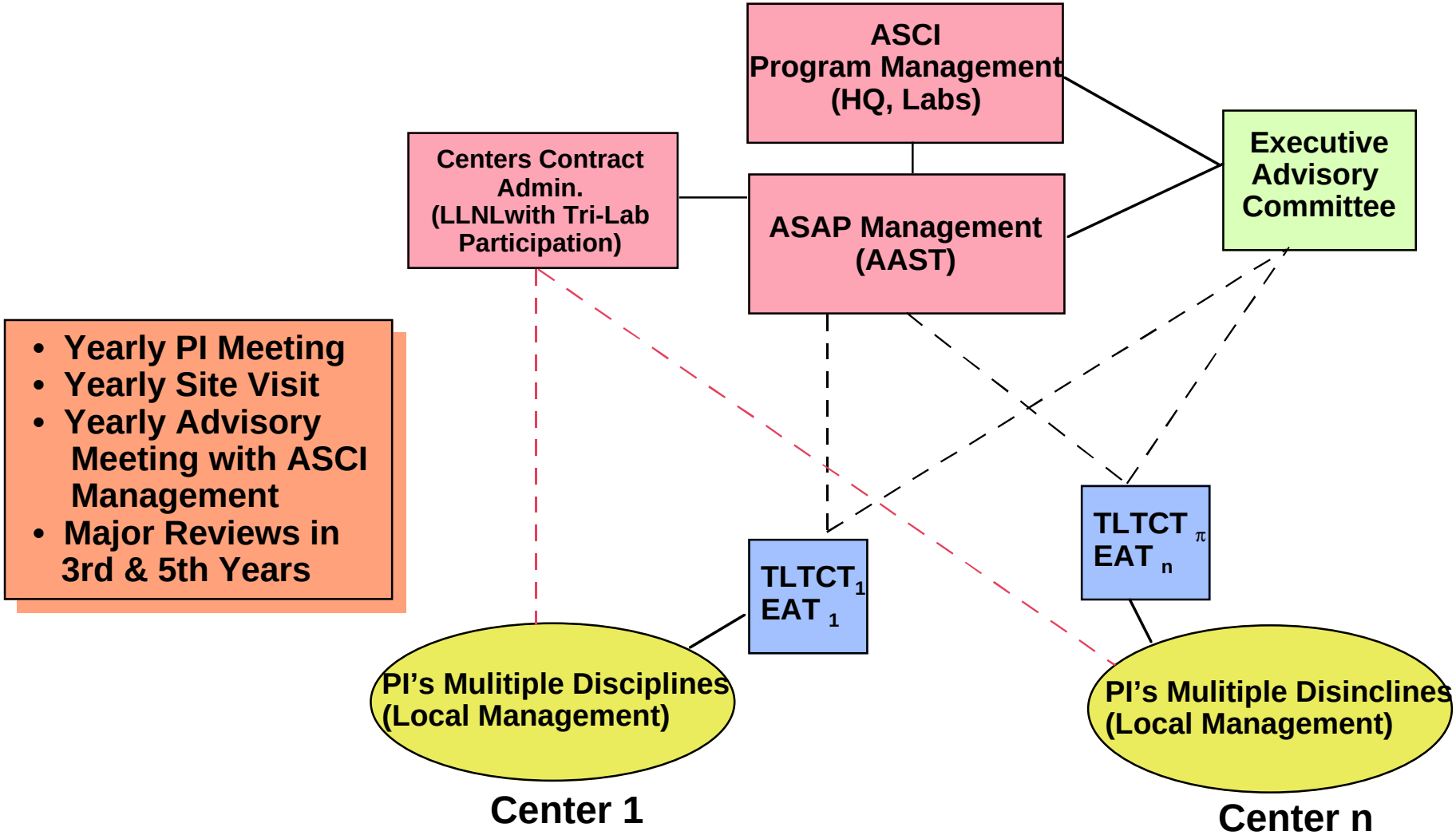
- **Tri-Lab Technical Members**
- **National Experts (university, industry)**
- **Other Agency Program Directors**

NOTE: ASCI laboratories technical leaders and HQs will jointly determine Reviewers Pool

Alliances Program: Organizational Structure



Proposed Coordination and Management Approach



Proposed Strategic Alliance Centers Management and Coordination Approach

Program Management	**1. Overall ASAP coordination and management by the ASCI ASAP Strategy Team (AAST) in consultation with groups below**
Tri-Lab Team per Center	**2. Tri-Lab Technical Coordination Team (TLTCT) formed for each Center**
External Experts Advisory Team per Center	**3. External Advisory Team (EAT) formed for each center (other government program directors & experts on applications, HEC, & PSE)**
Executive Advisory Committee	**4. Chairs of EATs & TLTCTs form an Executive Advisory Committee (EAC) for Academic Strategic Alliances Program**
Yearly Site Visits by EAC	**5. AAST, TLTCTs, EATs, DOE-HQ staff conduct yearly site visits to each Center**

Proposed Strategic Alliance Centers Management Approach (continued)

Single Contact for Administration

6. **Administration and housekeeping via one contact point. . .LLNL will be agent with Tri-lab participation.**

Annual PI's Meeting

7. **Annual ASAP PI's Meeting held for cross-fertilization and cross-information purposes and group progress reporting.**

Annual Advisory Meeting with ASCI Management

8. **EAC, AAST and ASCI Management hold annual management, advisory, feedback, & review meeting.**

Major review at 3rd & 5th years

9. **Major project review and site visit in third year and fifth year for mid-course correction purposes, if needed, and to determine continuation of contract.**

NOTE: External Advisory Teams and Executive Advisory Committee identify problems, suggest corrections, and serve as validators of program for DP senior managers, OSTP, Congress, industry, other agencies and external community.

Frequently Asked Questions (FAQs)

- **Do I understand the Web pages correctly that the current call for pre-proposals is for the Centers only, and that Levels 2 and 3 funding will be decided in the future?**

- **Should the current procedure be followed for pre-proposals requesting Level 2 funding? Will Levels 2 and 3 be discussed at the Dallas meeting?**

- **I have read the call for information and pre-proposals for the ASAP program. Could you please look at the information pointed to my web address given below and let me know if it is appropriate for us to submit a pre-proposal?**

- **How will each Center get access to Terascale computing resources? What kind of computer equipment can I include in my proposal?**

Frequently Asked Questions (FAQs)

- In my previous attempts to respond to DOE-DP lab research opportunities it has been my impression that the Universities which will get these awards are already pre-determined. Is it worth my effort to make a serious effort to understand what the program needs and submit a proposal accordingly, or are the awards to be made already "wired"?

- Is it possible for a University to submit more than one Center proposal?

- Are there extra points given for proposing a Center with several partners from different universities?

- Will you make the materials from the Web available via anonymous ftp?

- Must nuclear issues be included to get consideration? Will these be the determining factor?

Frequently Asked Questions (FAQs)

- **Should all three ASCI areas: Applications, modeling, PSE and platforms be included in a proposal? Can we ignore any categories?**
- **What are the criteria for success after 3 years? Are there preconceptions about deliverables?**
- **Will students visiting the labs for summers get clearances?**